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tant from the center, or 1 and 2 distant from the extremity of the axis, and their corresponding ordinates are $\frac{3}{5}b$ and $\frac{4}{5}b$.

If $n = 3$, we have $n^2 + 1 = 10$, and the distances of the two points from the extremity of the axis are 4 and 2, and their corresponding ordinates are $\frac{4}{5}b$ and $\frac{3}{5}b$. If $n = 4$, $n^2 + 1 = 17$, and the distances of the two points from the extremity of the axis are 9 and 2, and their corresponding ordinates are $\frac{15}{17}b$ and $\frac{8}{17}b$. By assigning other values to n other rational ordinates may be found to any extent that may be desired.

It is remarkable that whatever value may be assigned to n, one of the points in the axis that has a rational ordinate will always be at a distance from the extremity of the axis equal to two of the units in n.

* * *

PROBLEM.—To integrate $\dfrac{dx}{1 + e\cos x}$.

We have $\dfrac{dx}{1 + e\cos x} = \dfrac{dx}{1 + e\cos^2 \frac{1}{2}x - e\sin^2 \frac{1}{2}x}$.

Put tan. $\frac{1}{2}x = z$; then $\frac{1}{2}\sec^2 \frac{1}{2}x\,dx = dz$, and $\sec^2 \frac{1}{2}x = 2\,dz$.

Therefore the required integral

$$= \int \frac{\dfrac{dx}{\cos^2 \frac{1}{2}x}}{\dfrac{1}{\cos^2 \frac{1}{2}x} + e - e\tan^2 \frac{1}{2}x} = \int \frac{\sec^2 \frac{1}{2}x\,dx}{\sec^2 \frac{1}{2}x + e - e\tan^2 \frac{1}{2}x}$$

$$= \int \frac{2\,dz}{1 + z^2 + e - e z^2} = \frac{2}{1+e}\int \frac{dz}{1 + \dfrac{1-e}{1+e}z^2}$$

$$= \frac{2}{1+e}\sqrt{\frac{1+e}{1-e}}\int \frac{\sqrt{\dfrac{1-e}{1+e}}\,dz}{1 + \dfrac{1-e}{1+e}z^2}$$

$$= \frac{2}{\sqrt{1-e^2}}\tan^{-1}\sqrt{\frac{1-e}{1+e}}\,z = \frac{2}{\sqrt{1-e^2}}\tan^{-1}\sqrt{\frac{1-e}{1+e}}\tan\tfrac{1}{2}x + C.$$

—JAMES E. CLARK, Professor of Mathematics, *William Jewell College*, Liberty, Mo.